

## PATENT SPECIFICATION



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## COMPLETE SPECIFICATION.

## Improvements in and relating to Pipe Connections.

(A communication from HARRY SLOCUM LEWIS, of Beaver Falls, Lewis County, New York, United States of America, a citizen of the United States of America.)

I, CONRAD ARNOLD, of 11 & 12, Southampton Buildings, London, W.C. 2, a British subject, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to pipe connections and more particularly to elbow fittings of pipes used in connection with steam distributing systems, and has for its object the provision of means to prevent corrosion and erosion of the pipes, more particularly around the screw threaded ends thereof.

It has been proposed to fit into the cylindrical tubes of steam boilers and the like, interchangeable sheaths of thin metal for facilitating the removal of scale and like deposited matter from the tubes; the said sheaths being slightly tapered and having a flange at one end thereof. It has also been proposed to employ in conjunction with a coupling for connecting a branch pipe to a water main, a bush composed of vulcanite or equivalent incorrodible substance, the said bush, which is screwed or driven into the end of the branch pipe, having thereon a flange which extends over the end of the said branch pipe.

According to this invention there is fitted within the ends of the pipes to be connected a metallic bush comprising a relatively short, substantially cylindrical part having an intermediate circumferentially expanded portion of a diameter initially greater than the interior diameter of the threaded end of the pipe, whereby when the bush is

forced into the pipe, the expanded portion is compressed radially to form a tight friction joint between the pipe and the metallic bush.

In the accompanying drawings: 54

Figure 1 is a longitudinal sectional view of portions of two pipe sections arranged at an angle to each other, and an elbow connecting the same together with my improved bushings in the adjacent ends of both pipe sections.

Figure 2 is a side elevation of the detached bushing before being inserted into the pipe section shown by dotted lines. 55

The externally threaded ends of the two pipe sections as A and A<sup>1</sup> are connected by an elbow B having internally threaded ends b engaging the externally threaded ends a of the pipe sections. 60 Within the threaded end of each pipe section is tightly fitted a bushing l of relatively thin non-corrodible sheet metal of sufficient length when placed in operative position to receive the impact of the steam or other fluid when passing through the angle at the elbow. 65

The main body of the bushing is normally swelled or bowed outwardly at l<sup>1</sup> between its ends to a slightly greater 70 diameter than the interior diameter of the pipe in which it is to be inserted so that when forced into the pipe by endwise pressure, it will be slightly extended endwise by inward compression of its bowed sides and will also form a tighter joint with the pipe section than would be possible without previously swelling the bushing in the manner described. 75

The inner end of the bushing is preferably provided with an annular flange 2 forming a stop shoulder adapted to engage the adjacent end of the pipe section for limiting the endwise movement of the bushing into the pipe, it 80 being understood that the diameter of 85

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the flange 2 is slightly less than the external diameter of the adjacent end of the pipe to avoid contact with the threads of the elbow B.

5 The object in showing the bushings in both ends of the pipe sections is to protect the adjacent threaded ends of said sections by the flow of the fluid in either direction as for example, the outflow of 10 the steam in one direction and the back-flow of the water condensation in the opposite direction common to steam heating systems.

I have found by actual use that 15 bushings of this character placed in the threaded ends of the pipe sections, particularly at the elbow connections therewith, renders the pipe sections practically indestructible by protecting their 20 threaded ends from disintegration by corrosion and erosion, and also enables them to be more easily removed from the elbow for replacement of the bushings when impaired by erosion or other cause.

25 It will be evident from the foregoing description that a bushing of this character may be used in the threaded end of any pipe section irrespective of the form of the connection therewith, 30 and therefore I do not wish to limit myself to its use in connection with elbow sections.

Having now particularly described and ascertained the nature of the said inven-

tion and in what manner the same is to be performed, as communicated to me by my foreign correspondent, I declare that what I claim is:—

1. A pipe connection for metallic pipes with threaded ends having in combination therewith a metallic bush comprising a relatively short, substantially cylindrical part having an intermediate circumferentially expanded portion of a diameter initially greater than the 45 interior diameter of the threaded end of the pipe, whereby when the bush is forced into the pipe, the expanded portion is compressed radially to form a tight friction joint between the pipe and the metallic bush.

2. A metallic bush for pipes as claimed in Claim 1, wherein a circumferential flange is formed at the outer end of the bush the external diameter of the said 55 flange being the same diameter or of less diameter than the external diameter of the thread on the end of the pipe.

3. A metallic bush for pipes, constructed substantially as described and 60 illustrated in the accompanying drawing for the purpose specified.

Dated this 19th day of August, 1926.

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Agents for the Applicant.

Redhill: Printed for His Majesty's Stationery Office, by Love & Malcomson, Ltd.—1927.

[This Drawing is a reproduction of the Original on a reduced scale.]

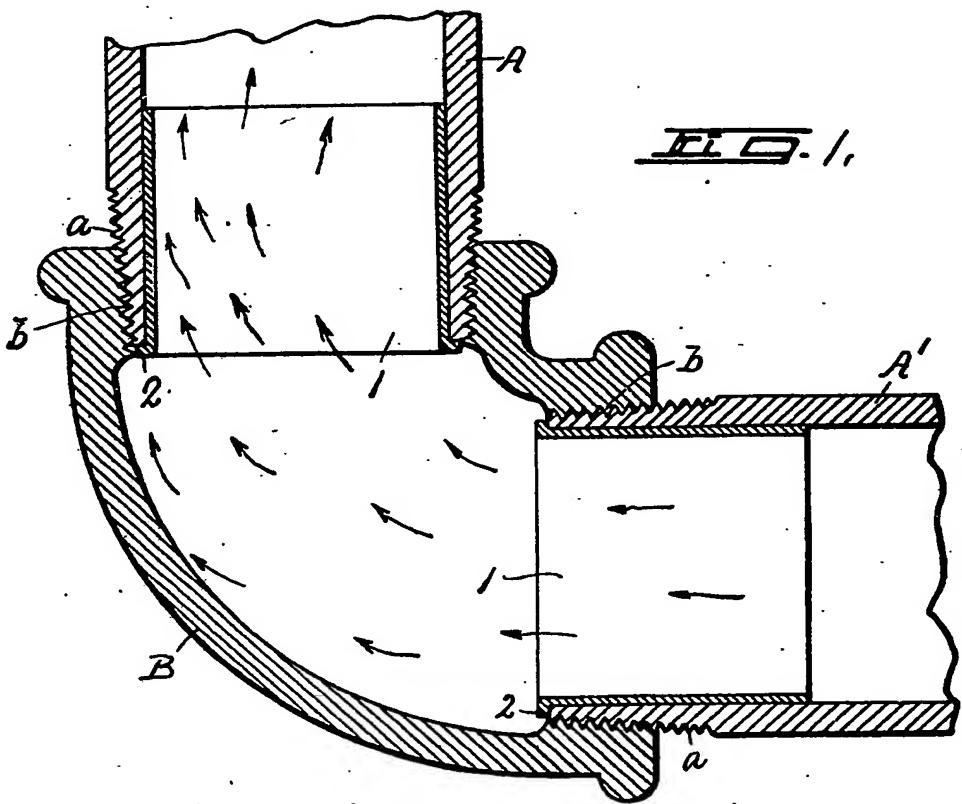
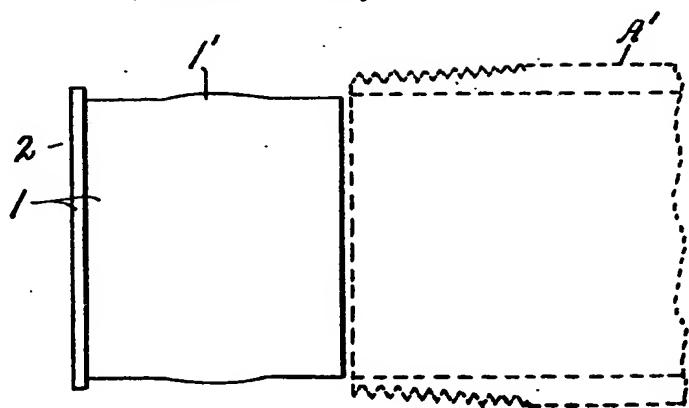


FIG. 2.



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